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WATER SUPPLY SUMMARY AND OUTLOOK FOR OREGON



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

OREGON DEPARTMENT OF WATER RESOURCES

AS OF
OCT. 1, 1980

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: THE SNOTEL PROJECT CENTRAL COMPUTER FACILITIES IN PORTLAND, OREGON. THE TERMINAL, PRINTER, COMPUTER AND TAPE DRIVES HAVE NOT COMPLETELY REPLACED THE SNOW SAMPLING TUBES SEEN IN THE FOREGROUND.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR OREGON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued

OCTOBER 1, 1980

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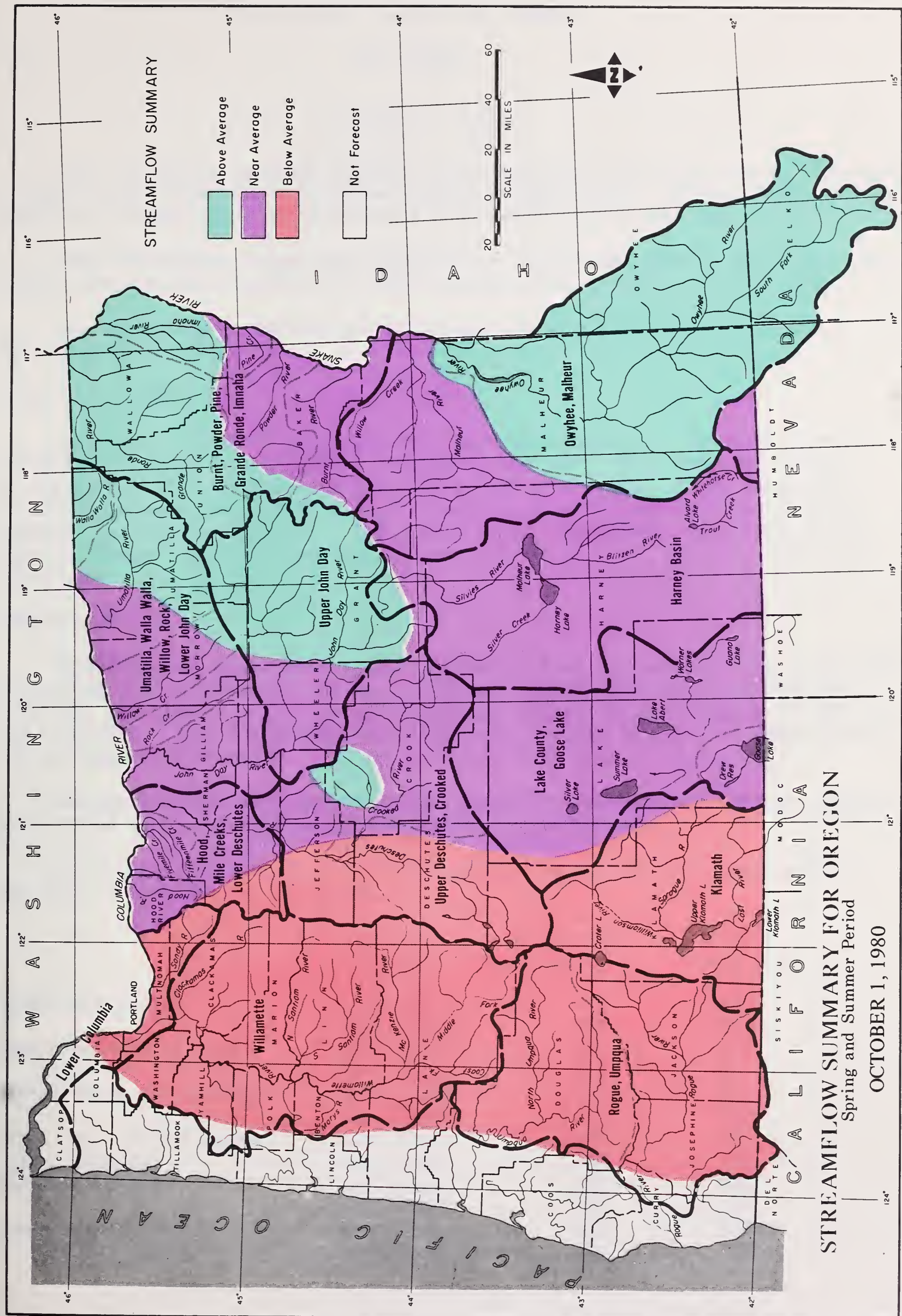
In Cooperation with

OREGON
DEPARTMENT
OF
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WATER SUPPLY OUTLOOK AND SUMMARY

FOR OREGON

OCTOBER 1, 1980

Most irrigators received adequate water supplies this past season. Although streamflow was forecast to be below average in many areas, cool wet spring weather lasting up through June delayed runoff and helped water users considerably.

Some shortages of water were reported in the central part of the state, and Douglas and Jackson Counties, on minor streams which normally run out early.

Hay and forage production and crop yields were mostly reported as being very good to excellent.

RESERVOIR STORAGE

Reservoir storage is generally very good for October 1. Twenty-five major irrigation reservoirs are storing 1,476,500 acre feet. This compares closely to the normal of 1,500,000 acre feet and is 98% of average. A few reservoirs on the Upper Deschutes and in Klamath County have much below average carryover storage for this time of year. This could impact water users with access next season. These reservoirs are Crane Prairie, Crescent Lake, Wickiup, Gerber and Clear Lake.

STREAMFLOW

Streamflow was much better than expected in most of the state due to the cool wet spring. As an example: On May 1 inflow to Owyhee Reservoir was forecast to be 82% of normal for the rest of the season but was 97% of average in May and 165 % in June. This illustrates how runoff was delayed by the cool temperatures and assisted by June rains.

Average to above average streamflow generally occurred east of the Cascades while below normal streamflow was measured in western Oregon.

Representative streamflow for this summer as a percent of average versus the April 1 forecasts is as follows:

	<u>Period</u>	<u>Observed Flow</u>	<u>April 1 Forecast</u>
Owyhee Net Inflow	April-July	97%	128%
	April-Sept.	99%	128%
Chewaucan Near Paisley	April-July	96%	77%
	April-Sept.	95%	81%
Grande Ronde at LaGrande	April-July	113%	76%
	April-Sept.	114%	78%
Middle Fk. of Willamette	April-July	82%	75%
Near Oakridge	April-Sept.	80%	75%
Rogue at Raygold	April-July	78%	70%
	April-Sept.	79%	70%
Upper Klamath Lake	April-July	68%	70%
	April-Sept.	69%	70%

Summary continued -

Following is a summary of water supply conditions as reported by counties:

NORTHWEST OREGON COUNTIES

Marion - Water supply conditions were normal or above. Cool weather through most of the growing season kept demands down. Ground water supplies were sufficient.

Clatsop - No shortage of irrigation water this year. Very little irrigation was necessary.

Washington - Tualatin Valley Irrigation District reported 100% of normal supplies were available. No shortage reported elsewhere. A reduction in forage production and yields on approximately 3,500 acres was due to ash fall from the St. Helens eruption.

Columbia - 1980 water year was normal. Adequate supplies for all uses. 10,000 acres were effectively irrigated.

Tillamook - Current streamflow is way below normal, however there were no irrigation water shortages. Hay crops were good.

Clackamas - Streamflow has been very low, however water supplies have been adequate for crop production. Ground water supplies helped make up shortages. Thanks to cool weather water requirements were lower.

Yamhill - The water supply was 20% below normal. Some wells have gone dry in parts of the county. Crop yields varied considerably but were generally down 15%.

SOUTHWEST OREGON COUNTIES

Jackson - Some water shortages were experienced on the Rogue River, Evans Creek and Bear Creek. Talent Irrigation District has excellent carryover for next year and supplies were good this year. All municipalities had sufficient supplies. The Applegate system and Little Butte Creek had adequate supplies.

Linn - No shortages. Approximately 40,000 acres adequately irrigated. Again cool weather helped keep requirements down.

Benton - Irrigation water supplies were 100-110% of normal. Approximately 20,000 acres irrigated.

Curry - Water supplies were normal to above early in the season when the weather was cool and slightly below normal the last several months. Forage production was very good in the county. Ground water availability was below average all summer.

Josephine - 65-70% of irrigated acres received normal supplies. Forage was helped considerably because of Lost Creek Dam.

Coos - Normal water supplies were available. Forage production was excellent. Streams are currently very low due to the dry weather the past 2 months.

Summary continued -

Lane - No problems experienced.

Douglas - Supplies on the main stem of the Umpqua were 100%. New acres were irrigated from the storage in Ben Irving Reservoir. The rest of the County was down to minimum flows in August.

CENTRAL OREGON COUNTIES

Hood River - 100% of normal supplies were available. Approximately 43,000 acres were effectively irrigated.

Wasco - 1980 was a good irrigation year. Generally there was 100% of normal irrigation on about 25,000 acres. 4,000 acres had reduced supplies. Range and forage condition is good to very good.

Deschutes - The water supply varied from 70% to 100% of normal. The cold spring weather delayed runoff from snow melt and kept use requirements down. This helped to make for an "average" season.

Crook - Adequate water supplies. Good carryover storage in Ochoco and Prineville. Shortages were experienced on the Upper Crooked River late in season due to lack of summer rains.

Sherman - Supplies were adequate.

Jefferson - Some users experienced minor shortages when their allocations ran out. Reasonably good season.

Klamath - Irrigation supplies were generally adequate.

Harney - Better than normal year. Again the cool spring caused the water to last longer than usual. All lakes are full - they filled sooner than usual and levels are currently very good.

Lake - Supplies were adequate even in the north end of the county where streamflow dropped quicker. Again cool weather helped.

EASTERN OREGON COUNTIES

Malheur - Cool wet spring caused use to be far less than usual early in the season. Supplies were adequate. Succor Creek reservoir completely filled and ranchers had yearlong water for irrigation for the first time. Forage production was higher than normal. Carryover storage is good.

Wallowa - 1980 was a good water year. Cool wet weather caused use requirements to be less than normal. Hay yields were good.

Morrow - 1980 water supply was above normal again due to cool and wet weather early in the season. Yields on both irrigated and dry lands were above normal.

Summary continued -

Union - A good water year. Again due to wet weather early in the season and cool temperatures. Carryover in Wolf Creek Reservoir is above average.

Umatilla - Excellent year. Abundant rainfall early in the season, excellent runoff and no water shortages.

Wheeler - Average to above average water supplies available. This was due to the cool wet spring. A few smaller streams draining into the John Day had insufficient supplies. Range conditions are currently excellent.

Gilliam - "The best water year ever" reported on Rock Creek. Runoff irrigated 2,000 acres with 130% of normal supplies.

Grant - Generally adequate to slightly above average supplies. Shortages occurred late in the season on small streams. June rains helped considerably. One of the best hay years.

Baker - Approximately 120,000 acres received adequate irrigation water. Again timely rains were of great assistance. Excellent hay and forage yields were obtained.

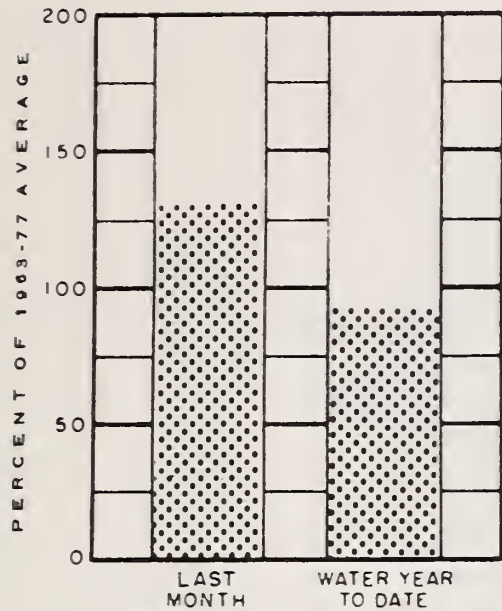
This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators.

STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1980

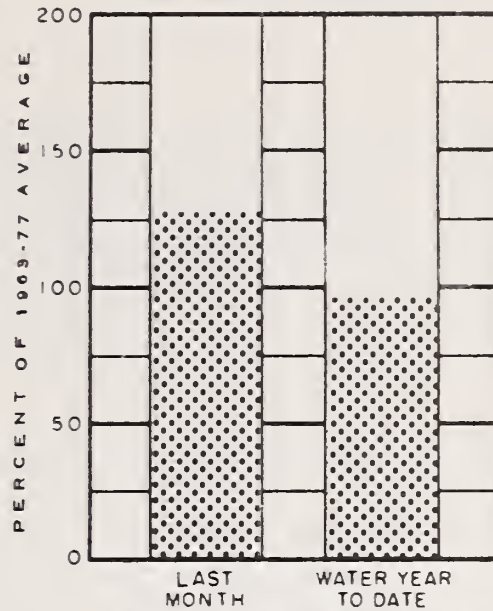
RESERVOIR	USABLE	THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1		
	CAPACITY (Thous. A.F.)	1980	1979	15-Year Average 1963-77
<u>UPPER COLUMBIA DRAINAGE</u>				
Owyhee	715.0	480.6	441.7	378.9
Beulah Reservoir	60.0	5.9	5.2	9.0
Bully Creek	30.0	11.5	9.1	6.7
Warm Springs	191.0	118.3	65.6	61.3
Phillips Lake	73.5	46.4	39.6	35.5
Unity	25.2	11.4	2.8	3.0
Thief Valley	17.4	N/R	N/R	4.6
Wallowa Lake	37.5	13.2	11.3	15.2
Wolf Creek	10.4	4.8	2.5	--
<u>LOWER COLUMBIA DRAINAGE</u>				
Cold Springs	50.0	4.1	3.4	3.2
McKay	73.8	17.5	10.3	9.8
Ochoco	47.5	27.2	22.0	16.7
Prineville	153.0	105.3	97.5	95.3
Crane Prairie	55.3	9.7	11.1	21.3
Crescent Lake	86.9	13.2	15.9	45.1
Wickiup	200.0	29.0	29.3	61.3
Clear Lake (Wasco)	11.9	N/R	N/R	2.6
Blue River	85.6	14.5	13.3	17.4
Cottage Grove	30.0	11.9	12.8	6.7
Cougar	155.2	66.4	53.9	84.1
Detroit	299.9	134.1	161.2	179.4
Dorena	70.5	36.6	28.6	18.7
Fall Creek	115.0	56.2	68.9	31.2
Fern Ridge	94.2	75.8	78.3	62.4
Foster	30.0	24.8	25.1	23.2
Green Peter	270.0	252.6	144.5	116.0
Hills Creek	200.0	84.1	79.9	102.5
Lookout Point	337.2	204.2	173.0	202.4
Timothy Lake	61.7	56.2	54.2	61.0
Henry Hagg Lake	53.0	30.7	32.1	--
<u>WEST COAST DRAINAGE</u>				
Fourmile Lake	16.1	3.4	4.1	6.8
Fish Lake	8.0	3.0	3.7	3.8
Howard Prairie	60.0	49.6	47.3	43.3
Hyatt Prairie	16.1	10.2	10.1	9.8
Emigrant Lake	39.0	11.6	8.9	7.7
Lost Creek	315.0	151.3	128.8	--
Upper Klamath	584.0	218.2	138.9	332.4
Gerber	94.0	26.8	10.0	38.0
Clear Lake	440.2	153.2	96.3	206.0
Cottonwood	8.7	1.9	0.4	0.6
Drews	63.0	49.1	11.9	29.4
Thompson Valley	19.5	N/R	0.6	--

CURRENT OREGON STREAMFLOW

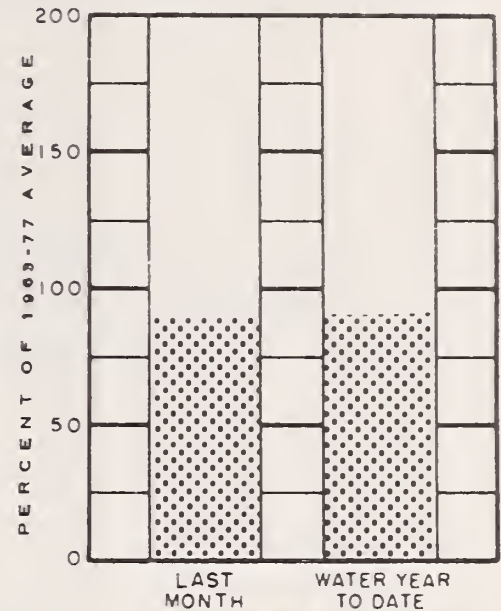
OCTOBER 1, 1980



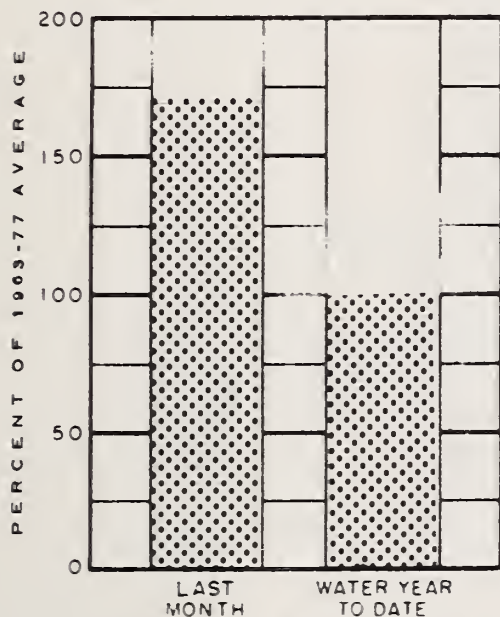
Owyhee Lake net inflow



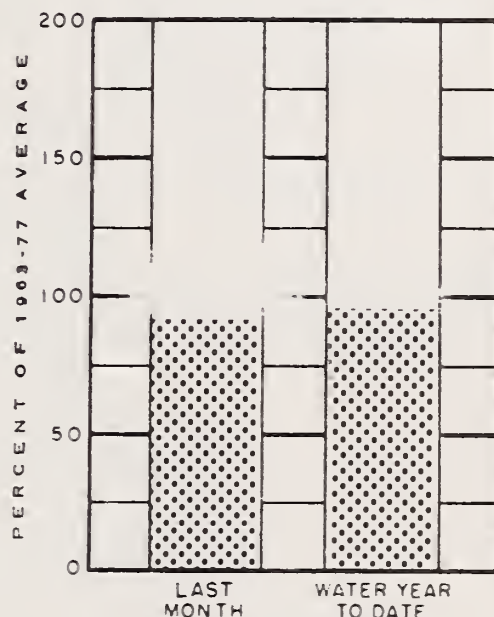
Grande Ronde at La Grande



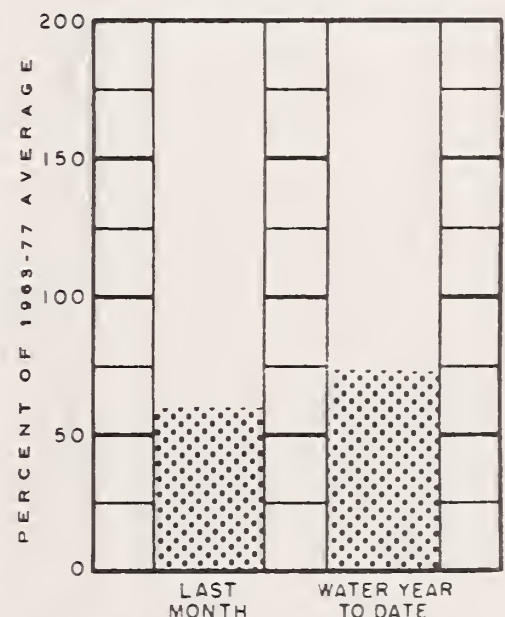
Chewaucan nr. Paisley



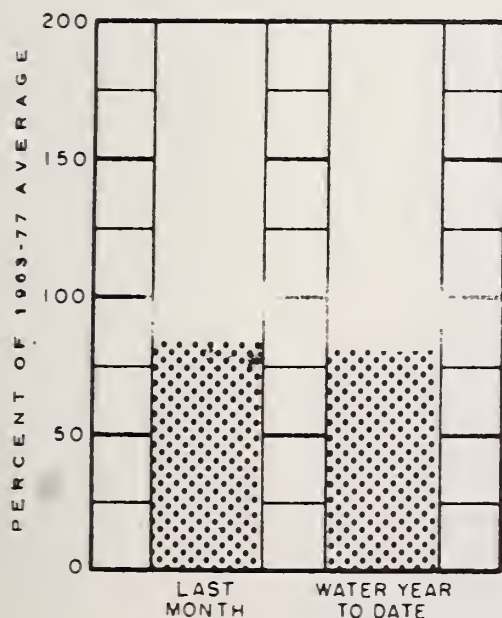
John Day at Service Creek



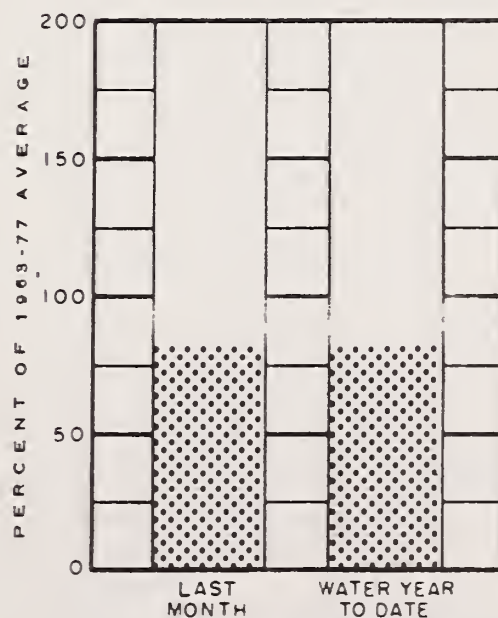
Deschutes at Moody



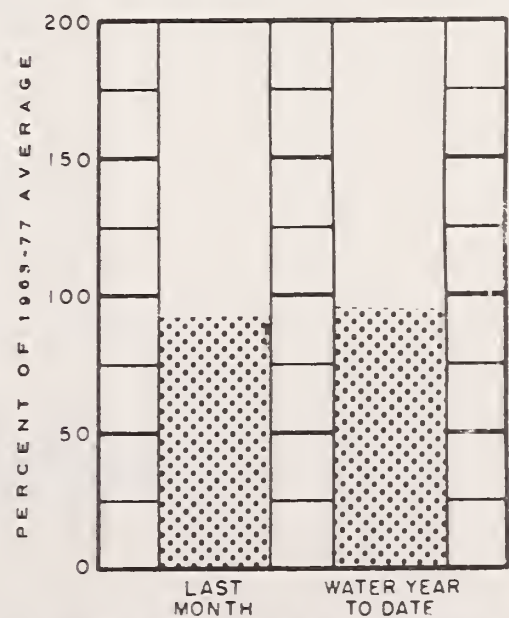
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.;
and North and South Boards of Control Owyhee Project.

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon Department Of Water Resources
- Soil and Water Conservation Districts of Oregon

COUNTY

- Douglas County Water Resources Survey

FEDERAL

- Department of Agriculture
 - Cooperative Extension Service
 - Forest Service
 - Soil Conservation Service
- Department of Commerce
 - NOAA, National Weather Service
- Department of the Interior
 - Bonneville Power Administration
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
- Department of National Defense
 - Corps of Army Engineers

PUBLIC UTILITIES

- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific National

MUNICIPALITIES

- City of Baker
- City of La Grande
- City of Portland
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Hood River Irrigation District
- Jordan Valley Irrigation District
- Juniper Flat Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- Middle Fork Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale - Oregon Irrigation District
- Warm Springs Irrigation District

PRIVATE ORGANIZATIONS

- The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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